Operating Instructions

Serial Monitor 5010

ROBERT RIELE GmbH & Co KG

Software Version 3.14
Documentation Version 01.2003

1 Introduction to Serial Monitor 5010

The software Serial Monitor 5010 was developed for the RIELE product:

Photometer *5010* upwards serial number 3500

The operator controls the photometer via a PC which employs menu-driven software. Several tasks can be performed:

- Like the method editor of Photometer *5010* the software Serial Monitor 5010 supports the adapting of methods to the photometer. With special functions the user can upload and download pre-programmed methods. Additionally, methods can be created and edited on the PC. Customer defined methods can be stored in an external file.

- The operating of Photometer *5010* by the remote control can be demonstrated. The user can easily recognize the meaning and performance of the defined instruction set.

- General operating software contained in FLASH MEMORY of Photometer *5010* can be updated. Data file can be downloaded from Internet, floppy disk or CD ROM.

- The EDP can be demonstrated in a special terminal window. The contents of the window can easily transferred to other applications.

2 INSTALLING

This chapter describes requirements and procedures for starting **Serial Monitor 5010**.

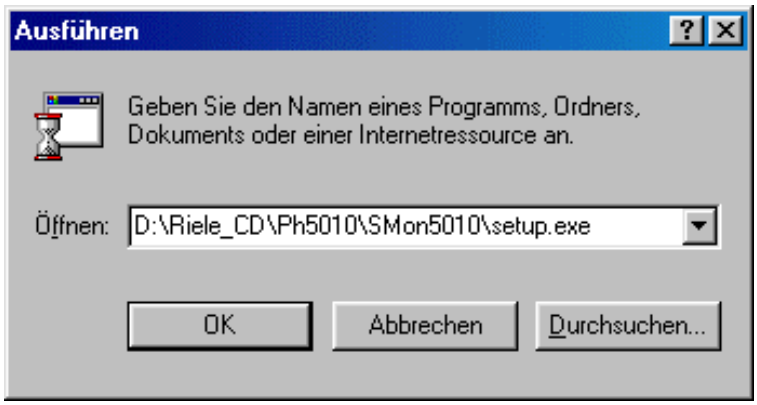
2.1 System requirements

The minimum and recommended system requirements needed to install and run the program are as follows:

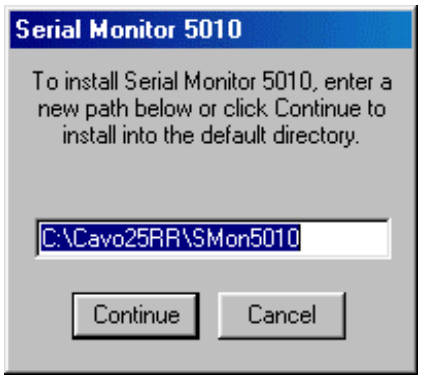
Photometer	Version 3.0	or higher
Windows 95	Version 4.00.950	or higher
Windows NT	Version 4.0	or higher

2.2 Installation of software

- Insert the RIELE CD into the CD-ROM drive.
- In the run dialog box enter e.g.: D:\Riele_CD\Ph5010\Smon5010\setup.exe



- Select the button <OK> to invoke the **Serial Monitor 5010 Installer**.
- The **Serial Monitor 5010** installation program starts.


Serial Monitor 5010
To install Serial Monitor 5010, enter a new path below or click Continue to install into the default directory.
C:\Cavo25RR\SMon5010
Continue
Cancel

- Confirm or enter new path of **Serial Monitor 5010**: C:\Cavo25RR\Smon5010
- Select the button <Continue> to run the installer and follow the instructions.

2.3 Organisation of software

Serial Monitor 5010 software is completely installed in a directory, e.g.:

C:
\Cavo25RR
\Smon5010
\Dl_5010
\Files

Other directories like \Windows\System are not changed or affected.

The registry of Windows is updated.

The directory C:\Ca_appsw is empty and may be deleted.

2.4 Deinstallation of software

Use of the official deinstallation tool of Windows is recommended as the registry of Windows is updated. The software product is named with: **Serial Monitor 5010**

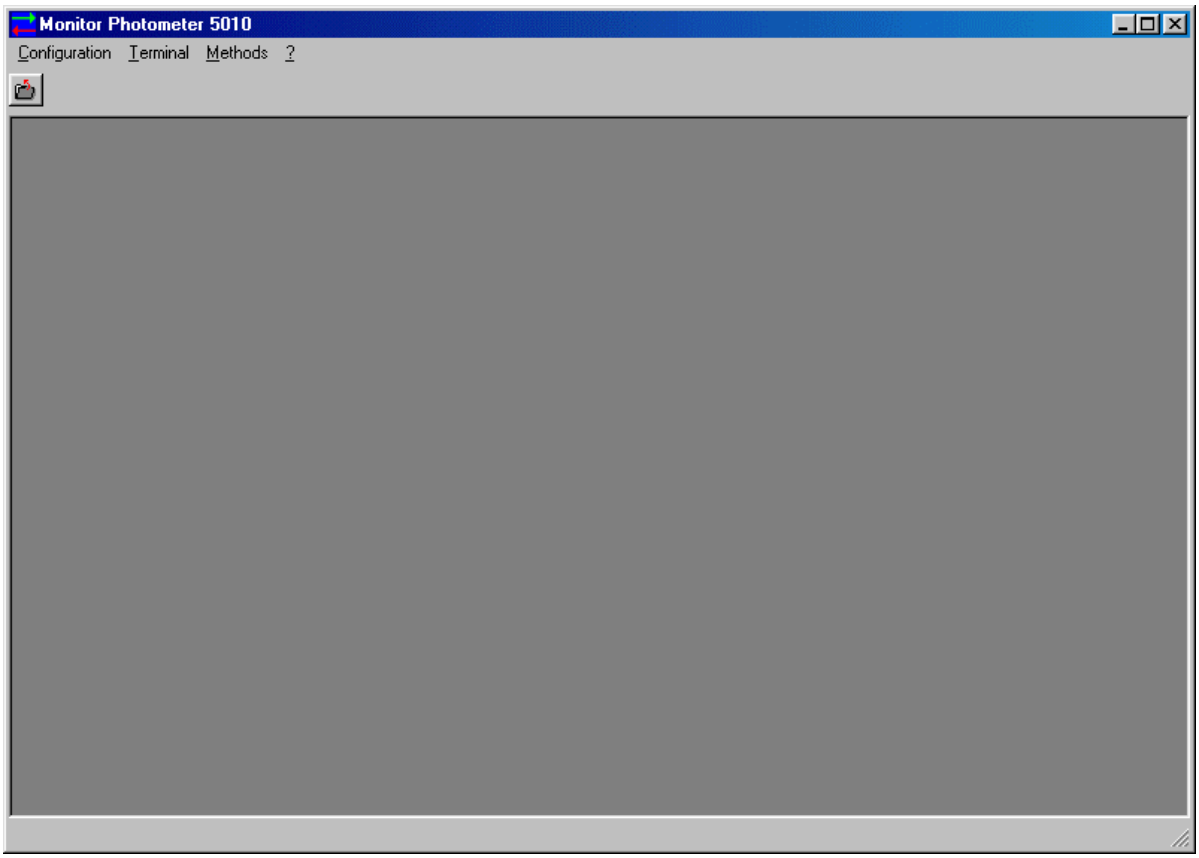
Also a special EXE-file can be used for deinstallation. The name of the file is Caindreg.exe. Its location is the directory of the application **Serial Monitor 5010.**

In any case, the file Method.dbf containing all application data will not be cleared. The location of this file is in the directory: \Files.

3 STARTING

Before starting the software connect PC and photometer in following manner:

- Switch off PC and Photometer *5010*.
- Connect PC and Photometer *5010* with a data interface cable.
  For further information see:
  Service manual of Photometer *5010*, chapter 6.1 – Communication protocol
- Switch on PC and Photometer *5010*.
- Start the program ”**Serial Monitor 5010.EXE**“
- The program shows the following window.
- At the first time control and correct the language and COM port with the menu CONFIGURATION.



4 Menu CONFIGURATION

The menu CONFIGURATION makes the setting of different parameters possible. The settings are saved by the program and therefore correctly adjusted at the next program call.

4.1 Deutsche Sprache

... selects German language

4.2 English language

... selects English language

4.3 Configure Interface

... selects COM port, baud rate, parity, data bits, stop bits.

The default settings of the serial interface are as follows:

Baud rate:..... 9600 bit/s
Data format:..... 7 data bits, 1 stop bit
Parity: ..... even

For further information see:
Service manual of Photometer *5010*, chapter 6.1 – Communication protocol

4.4 Set device

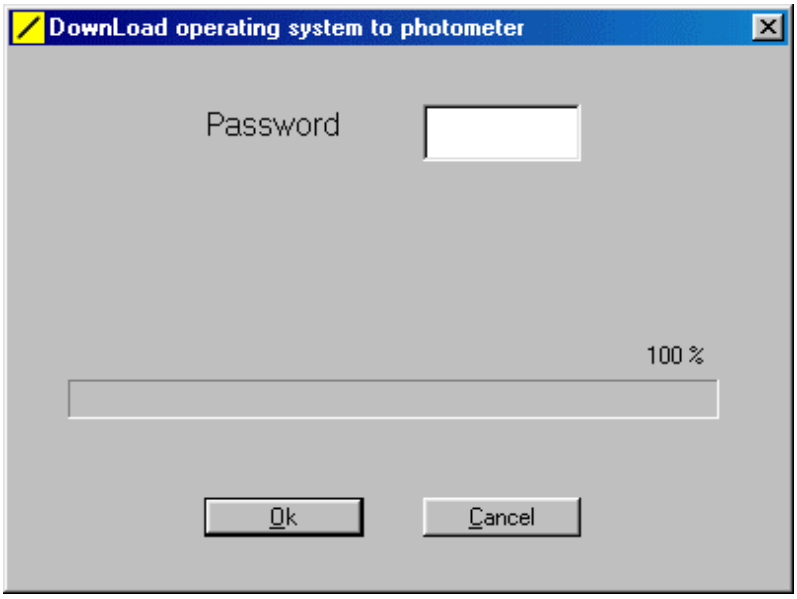
… selects different models of Photometer *5010*

4.5 Download operating system

… updates general operating software contained in FLASH MEMORY of Photometer *5010.*

The general operating software is supplied as a file. The actual file has the name “P_100.hex”. It can be downloaded by internet (see http://www.riele.de / Products / Photometer *5010* / Operating system). Besides specific files with different names are existing and can be used.

Before proceding with uploading the specific file of general operating software should be copied to the directory “DI_5010” (see chapter 2.3 – Organisation of software).



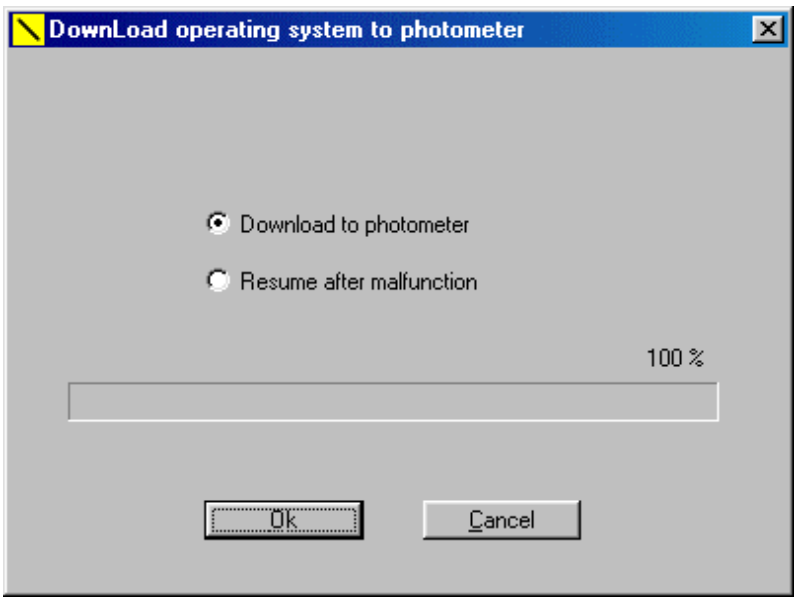
Before starting the procedure of download the Photometer *5010* has to be set to DOWNLOAD by [MODE], [SERIAL], [5] and [ENTER].

The Photometer *5010* displays:

```
DOWNLOAD
```

Attention: During the following procedure the FLASH MEMORY of Photometer *5010* will be erased and programmed electrically. The complete procedure needs up to seven minutes. During this operation be careful that there is no power fail out. Do not interrupt the connection between PC and Photometer *5010.*

The password is: **5010**

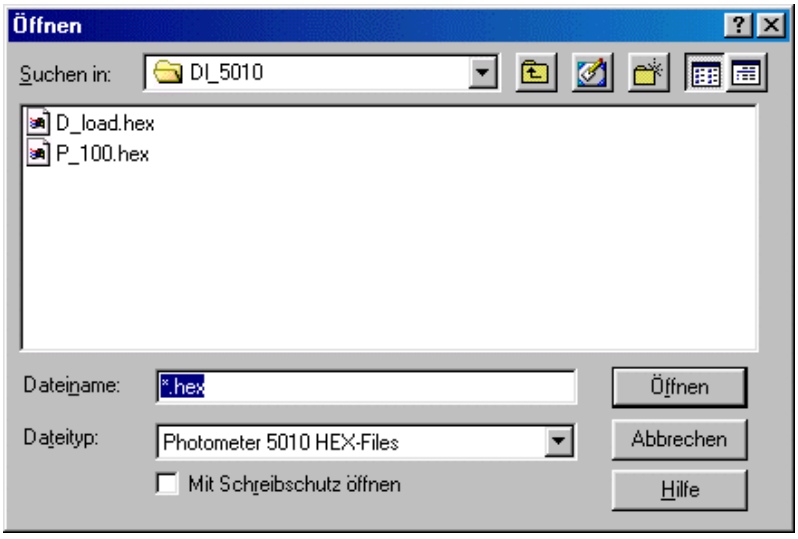


Select the first option – Download to photometer – and confirm with [ENTER].

Attention: Do not select the second option – Resume after malfunction - without having a malfunction. In case of a malfunction the Photometer *5010* displays more than10 minutes after start:

```
DOWNLOAD  Vx.x
PLEASE WAIT
```

Contact your dealer for getting help.



An open dialog is shown. Open the file e.g. P_100.hex. Never open the file D_load.hex. The download begins…
The window is closed and the progressbar shows the proceding of operation. After three up to seven minutes the Photometer *5010* stops the transferring of data with a reset operation. The new operating system is working.

After updating the general operating software of Photometer *5010* several initialization procedures have to be done by using service tools and utilities.
A detailed description of the service tools is contained in the service manual of Photometer *5010* (see chapter 3.4 – Service tools).
A detailed description of the utilities is contained in the operating manual of Photometer *5010* (see chapter 8 – Utilities).

- Make a “system initialization” by applying the tool **S1**:
  With this function the default parameters will be set.
- Make a “free methods initialization” by applying the tool **S2**:
  This operation is optional.
  Attention! With this function all methods edited by the user are deleted without call-back. In the case of doubt these methods should be checked before: Scroll through all methods with the method editor and note them down for an optional later new programming.
- Make a “parameter initialization“ by applying the tool **S3**:
  This operation is optional.
  Attention! The extended memory for the parameters of all nonlinear methods is deleted by this function without call-back and the corresponding user defined methods become useless.
- Make a setting of “attribut of PCB layout“ by applying the tool **S13**:
  Software applications may be dependent on this attribut.
- Make a “patients data initialization“ by applying the tool **S14**:
  Attention! The memory of patients data mangement is cleared completely.
  In case of a migration to operating system version 3.5 the operation has to be done.
- Define the laboratory name by applying the utility **U18**:
  The name of the laboratory can be stored permanently.
  In case of a migration to operating system version 3.5 the operation has to be done.
- Define the user names by applying the utility **U19**:
  The names of maximum five users can be stored permanently.
  In case of a migration to operating system version 3.5 the operation has to be done.

4.6 Exit

... quits the application

5 Menu TERMINAL

The items of menu TERMINAL demonstrate the operating of Photometer *5010* by the remote control and EDP.

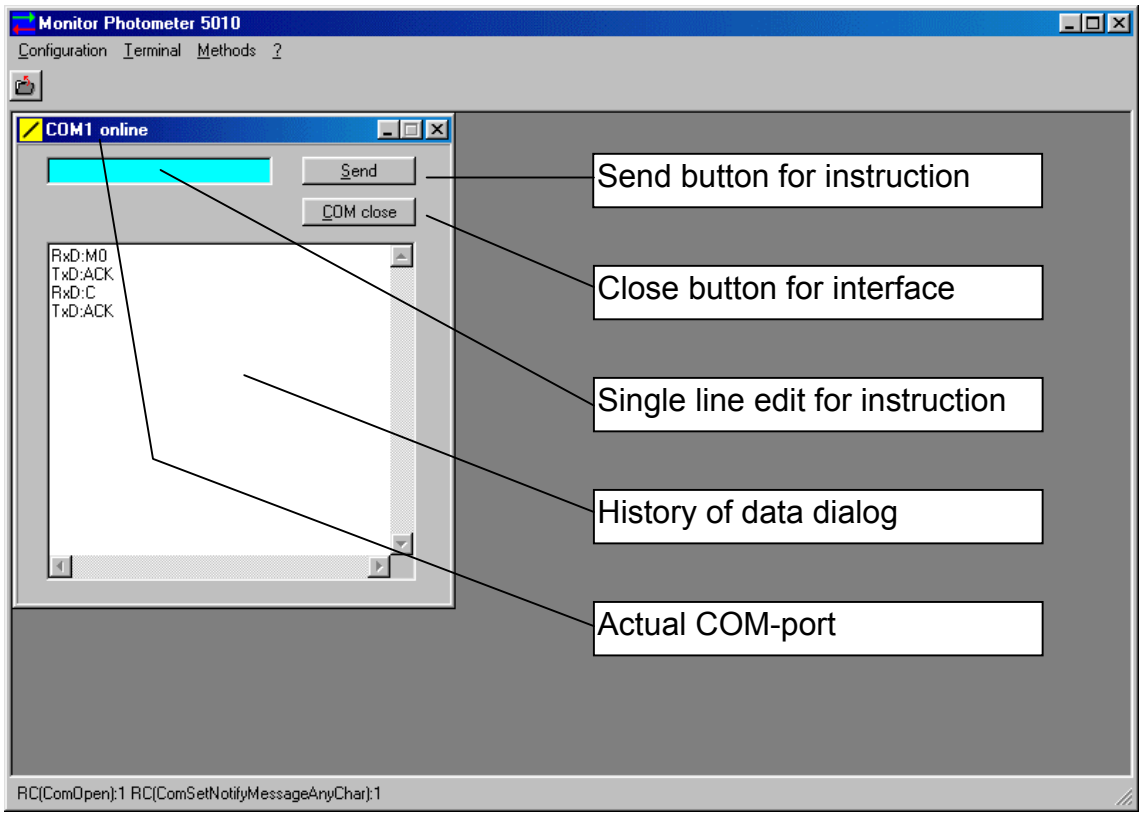
5.1 Remote control

The menu REMOTE CONTROL gives the user the possibility to remote the photometer. All instructions are embedded in a STX / ETX / BCC-protocol. Each information represented by an ASCII-string starts with a start character (start of text = STX) and stops with an end character (end of text = ETX). After each ETX a block code character called BCC is send. The BCC is the result of a XOR-function including the information and the ETX.
Protocols are accepted by the receiver with an acknowledgement (ACK) or a negative acknowledgement (NAK) character.

- Select the menu ”REMOTE CONTROL“.
- Activate on Photometer *5010* the utility program REMOTE by [MODE], [SERIAL], [3] and [ENTER]. The Photometer *5010* displays:

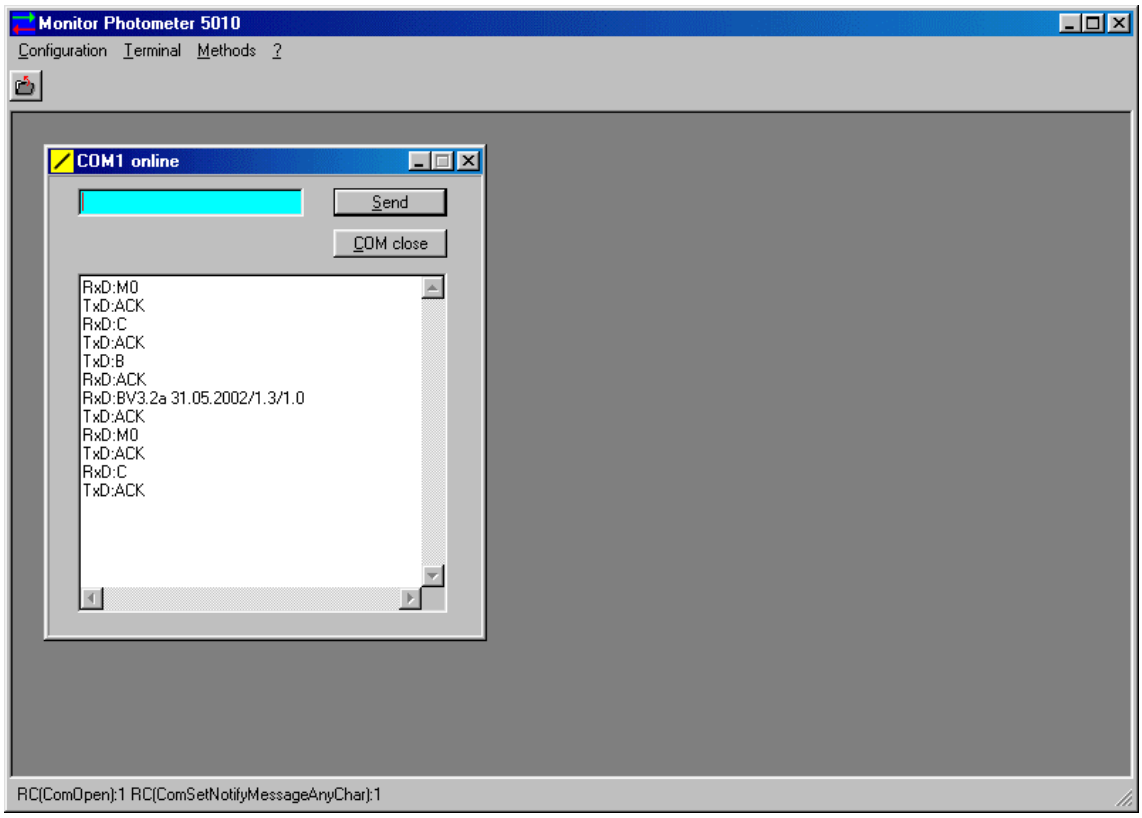
```
REMOTE
ON
```

- The program shows the following window:



Example for using remote instructions:

- Enter the character "B" to the single line edit for instruction and push the button ”Send“. The command “B” gives the information about the firmware of Photometer *5010*.
- The PC sends a protocol ”B“ to Photometer *5010*.
  In history of data dialog the line appears: TxD:B
  TxD means: Transfer of data from PC to Photometer *5010*
- Photometer *5010* accepts the instruction with an acknowledgement character. In history of data dialog the line appears: RxD:ACK
  RxD means: receipt of data from Photometer *5010*
- Photometer *5010* sends to the PC the information about the software version. In history of data dialog the line appears: RxD:B V3.2a 31.05.2002/1.3/1.0
- The PC accepts the instruction with an acknowledgement character. In history of data dialog the line appears: TxD:ACK
- After a complete dialog Photometer *5010* sends ”M0“ (Module 0 = M0) and ”C“ (Command = C) and is ready to accept a new instruction.



For further details see Service Manual chapter 6.1 – communication protocol

5.2 Printout to screen

The menu PRINTOUT TO SCREEN shows the operating of EDP mode. The EDP mode of Photometer *5010* supports STX / ETX / BCC-protocol or CR /LF protocol.

In menu PRINTOUT TO SCREEN all instructions are embedded in a STX / ETX / BCC-protocol. Each information represented by an ASCII-string starts with a start character (start of text = STX) and stops with an end character (end of text = ETX). After each ETX a block code character called BCC is send. The BCC is the result of a XOR-function including the information and the ETX.
Protocols are accepted by the receiver with an acknowledgement (ACK) or a negative acknowledgement (NAK) character.

- Select the menu „ PRINTOUT TO SCREEN “.
- Activate on Photometer *5010* the utility program EDP by [MODE], [SERIAL], [2] and [ENTER]. The Photometer *5010* displays:

```
EDP OFF
 1/ON     0/OFF
```

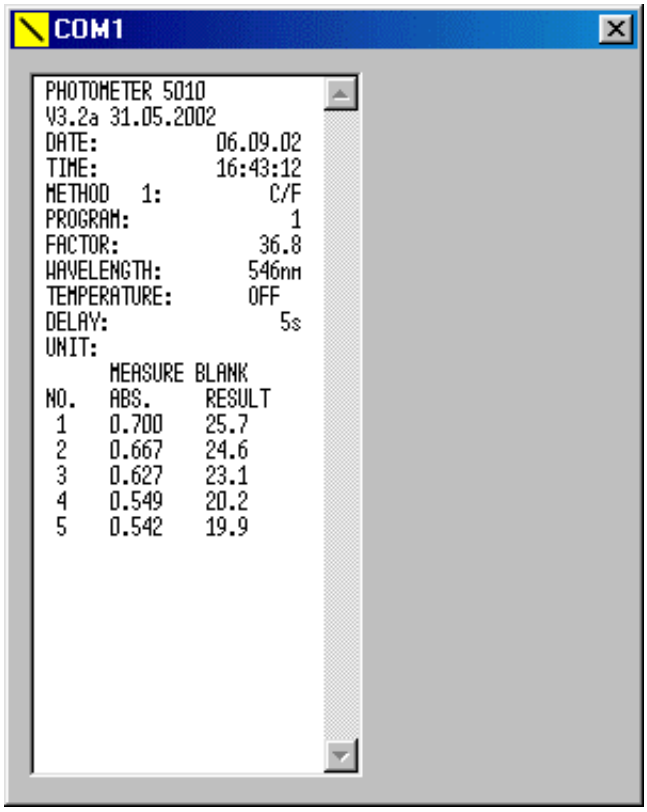
- Select the option [1]. Photometer *5010* displays:

```
EDP ON
0/S-E-B   1/CR-LF
```

- Select the option [0] and confirm with [ENTER]. Photometer *5010* displays:

```
METHOD NO.
INPUT       1-250
```

- The program shows the following window after selecting e.g. method 1 (C/F):



6 Menu METHODS

The menu METHODS enables the user to upload and download pre-programmed methods. Additionally, methods can be created and edited on the PC.

All methods are stored in a database called ”Methods.dbf“ situated in the subdirectory ”Files“. The data base has the format of a dBase III-file. The file may be replaced with a pre-programmed file.

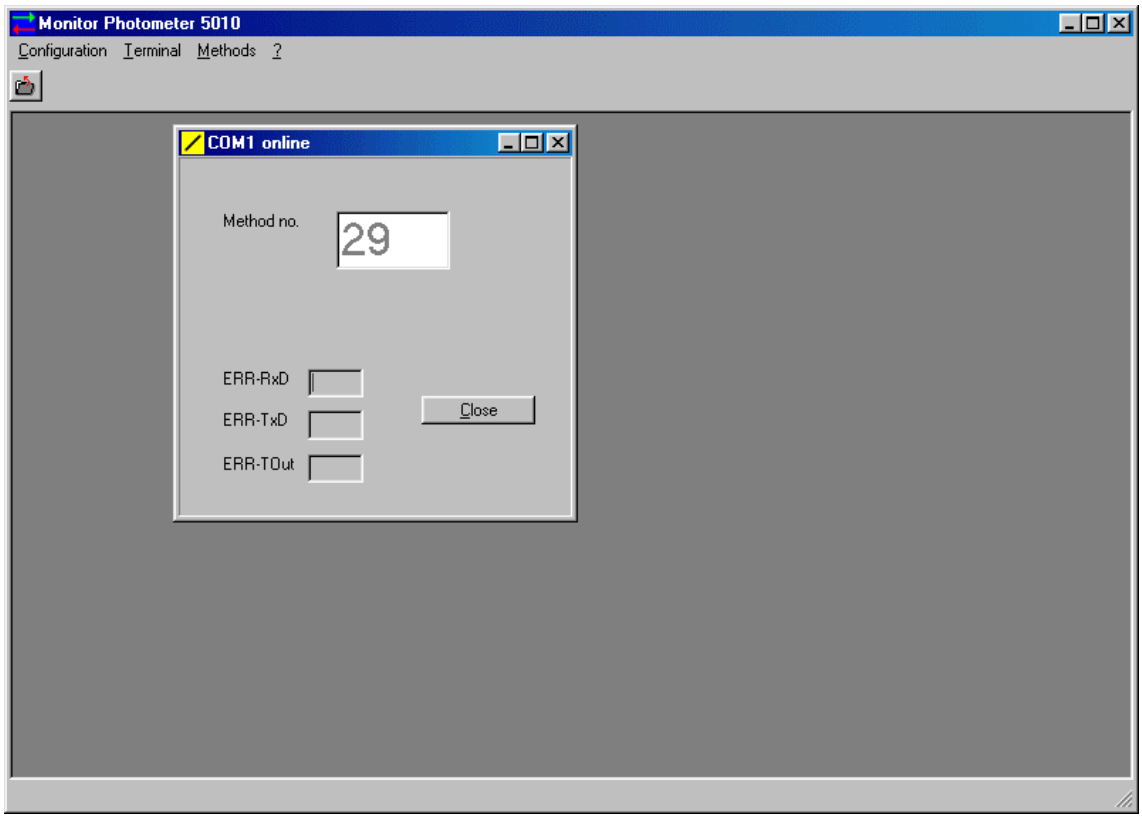
6.1 read from photometer

... fills the database ”Methods.dbf“ with all user defined methods. The function also reads the status of the photometer and defines the range of the free programmable methods. If the database is not empty, the methods read will be merged with the existing ones.

- Select the menu ”READ FROM PHOTOMETER“.
- Activate on Photometer *5010* the utility program REMOTE by [MODE], [SERIAL], [3] and [ENTER]. The Photometer *5010* displays:

```
REMOTE
ON
```

- The program shows the following window during reading from Photometer *5010*:



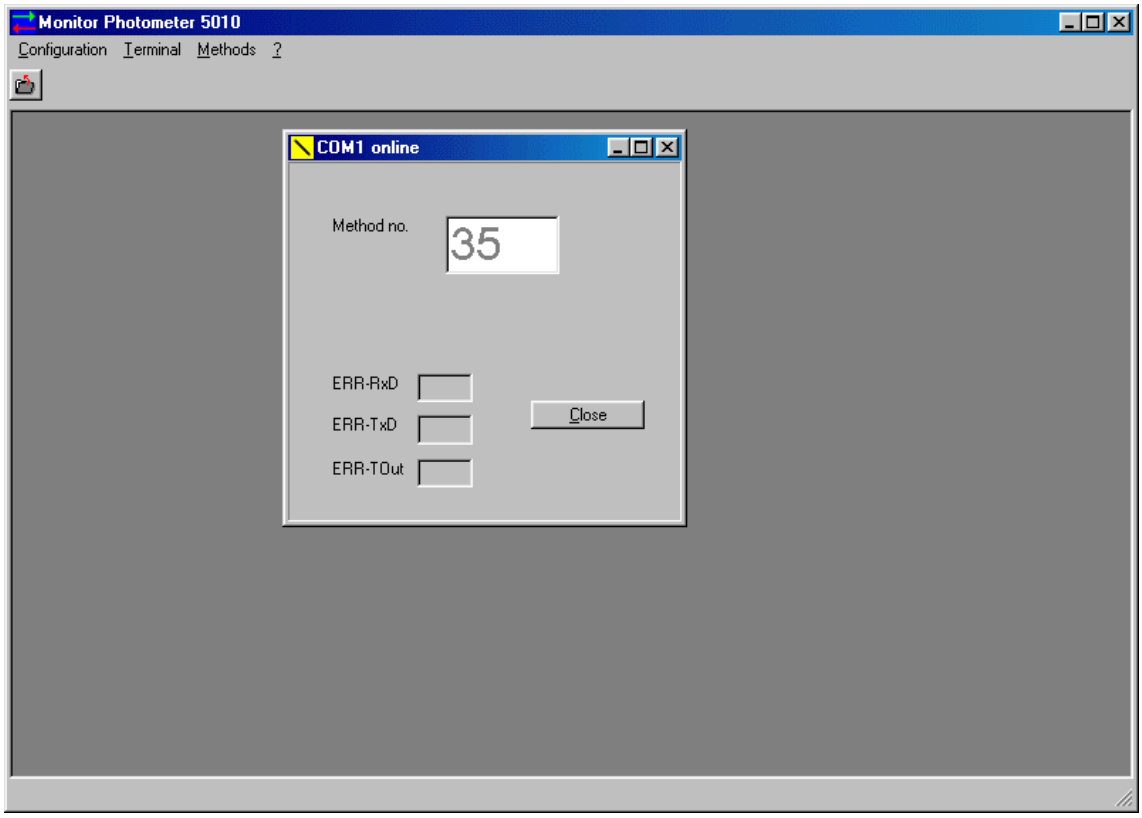
6.2 write to photometer

... stores all user defined methods of the database ”Methods.dbf“ to the photometer. The database methods will be merged or overwritten with the existing ones of Photometer *5010*.

- Select the menu ”WRITE TO PHOTOMETER“.
- Activate on Photometer *5010* the utility program REMOTE by [MODE], [SERIAL], [3] and [ENTER]. The Photometer *5010* displays:

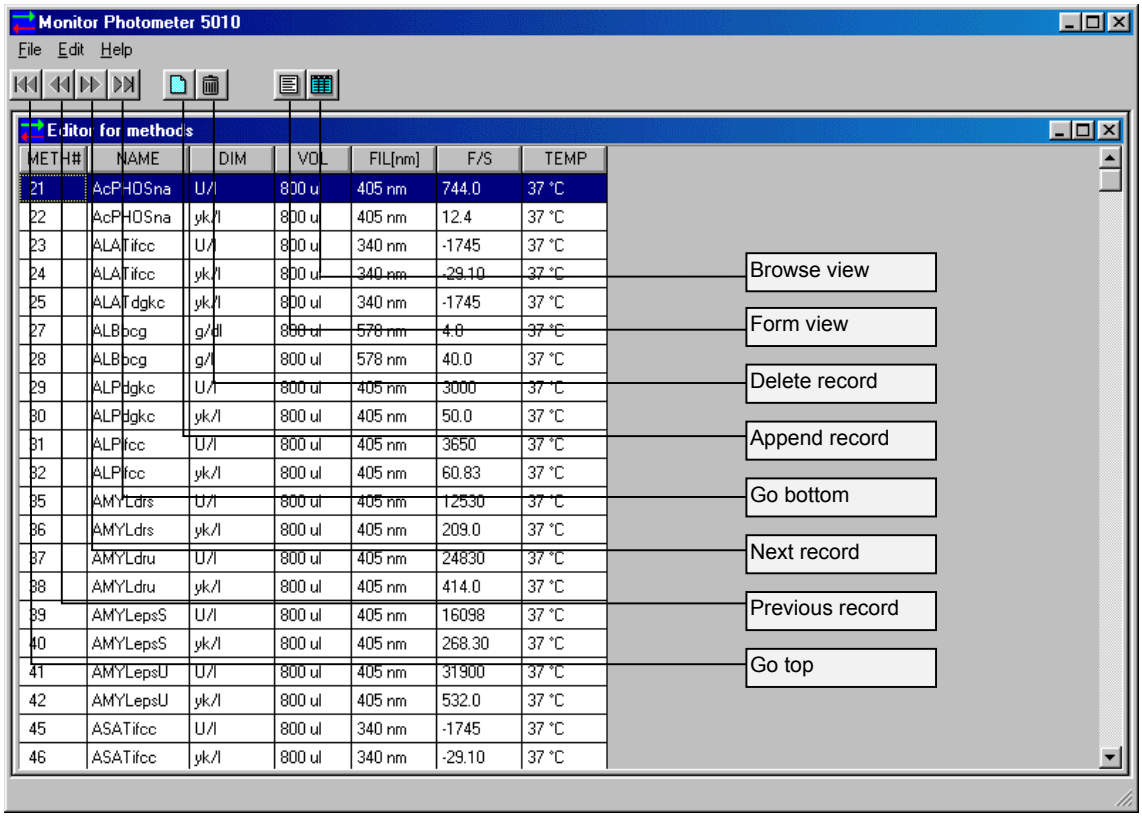
```
REMOTE
ON
```

- The program shows the following window during writing to Photometer *5010*:

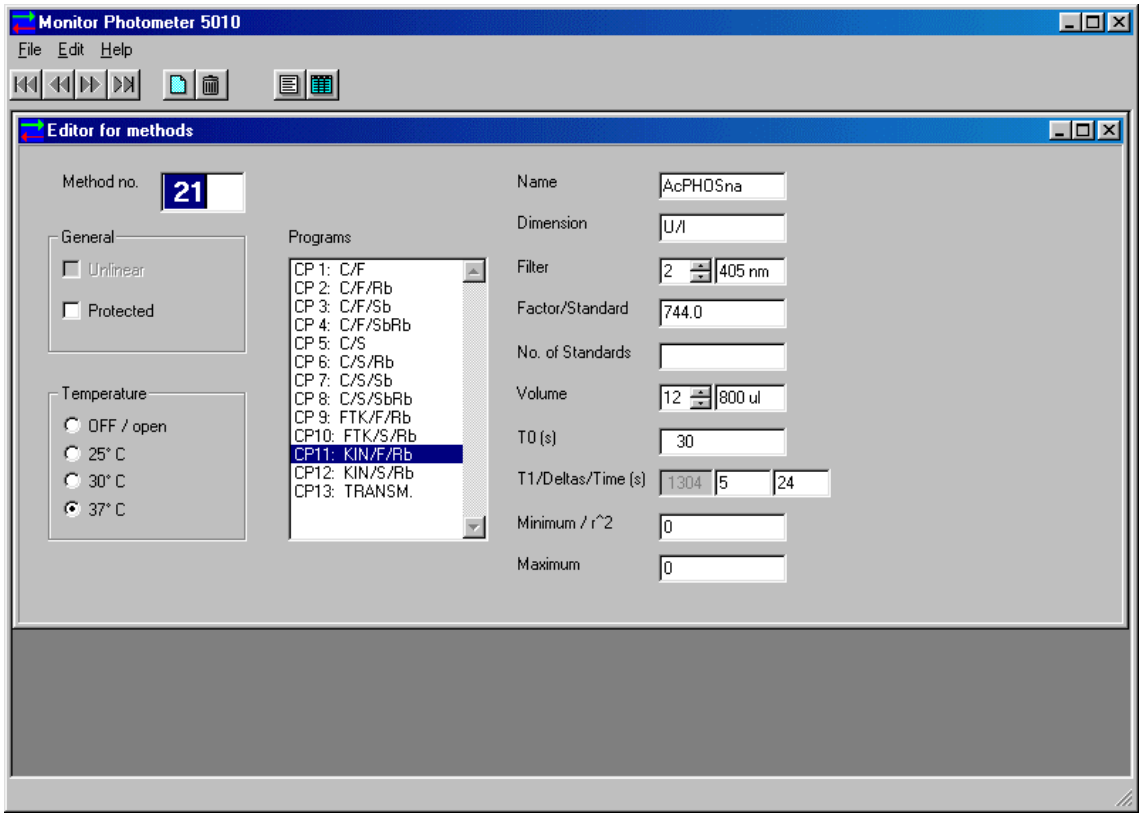


6.3 Edit

The browse view (write-protected):


Monitor Photometer 5010
File Edit Help
Editor for methods
METH# NAME DIM VOL FIL[nm] F/S TEMP
21 AcPHOSna U/l 800 u 405 nm 744.0 37 °C
22 AcPHOSna yk/l 800 u 405 nm 12.4 37 °C
23 ALATifcc U/l 800 u 340 nm -1745 37 °C
24 ALATifcc yk/l 800 u 340 nm -29.10 37 °C
25 ALATdgkc yk/l 800 ul 340 nm -1745 37 °C
27 ALBbcg g/dl 800 ul 578 nm 4.0 37 °C
28 ALBbcg g/l 800 ul 578 nm 40.0 37 °C
29 ALPdgkc U/l 800 ul 405 nm 3000 37 °C
30 ALPdgkc yk/l 800 ul 405 nm 50.0 37 °C
31 ALPtcc U/l 800 ul 405 nm 3650 37 °C
32 ALPtcc yk/l 800 ul 405 nm 60.83 37 °C
35 AMYLdrs U/l 800 ul 405 nm 12530 37 °C
36 AMYLdrs yk/l 800 ul 405 nm 209.0 37 °C
37 AMYLdru U/l 800 ul 405 nm 24830 37 °C
38 AMYLdru yk/l 800 ul 405 nm 414.0 37 °C
39 AMYLepsS U/l 800 ul 405 nm 16098 37 °C
40 AMYLepsS yk/l 800 ul 405 nm 268.30 37 °C
41 AMYLepsU U/l 800 ul 405 nm 31900 37 °C
42 AMYLepsU yk/l 800 ul 405 nm 532.0 37 °C
45 ASATifcc U/l 800 ul 340 nm -1745 37 °C
46 ASATifcc yk/l 800 ul 340 nm -29.10 37 °C
Browse view
Form view
Delete record
Append record
Go bottom
Next record
Previous record
Go top

The form view for fields to edit:



6.4 clear

... deletes and packs all records

6.5 pack

... packs the database ”Methods.dbf“

6.6 Organization of the working memory of methods

The working memory of Photometer *5010* is divided in two areas:

- The area of write-protected methods including basic methods with all available calculation procedures. The area starts with method 1 (End point with factor).
  With the function ”Methods write to photometer“ it is **not** possible to change the contents of this area.

- The area of not write-protected and write-protected methods.
  With the function ”Methods write to photometer“ it is possible to change the contents of this area.

6.7 Write protection of methods

A method of Photometer *5010* can be protected against clearing und editing. The form view of the edit mode allows setting a checkbox with the name “protected”. Setting and resetting of the checkbox is only possible with password.

After writing to photometer a protected method can be cleared in the database. But the protected method of the Photometer *5010* can not be cleared.

7 Menu?

The menu ? employs the item:

- **Info**

  ...shows information about application name and version